Esteemed members of Congress:

As you will hear from the other witnesses, gathering reliable data about China's organ transplantation system is extremely difficult. Since 2016 I have been collaborating with Dr. Jacob Lavee, a cardiac transplant surgeon, professor of surgery at Tel Aviv University, and ethical leader in organ transplants globally, in studying China's transplant system. We have published two major scientific papers since then.

I am pleased to discuss these works with you -- but first let me place them in context.

In the developed world, transplant organs come from voluntary donors. Executed prisoners are typically forbidden from donating their organs. The role of governments is to establish the legal and regulatory framework around ethical, voluntary donation.

China is unique here in several respects. To begin with, it's the only country that has systematically relied upon prisoners as the sole source of organs for many decades. Since 2015 Chinese authorities say they have stopped this practice, but there are good reasons to doubt these claims, as I will discuss in a moment. Secondly, China had no regulatory framework around organ transplantation at all until 2007 -- indeed, because China is not a rule-of-law country, there is no guarantee that any regulations that do exist would be enforced.

Beginning in the year 2000, China's transplant system began to grow very rapidly. Thousands of new transplant professionals were trained, scores of new transplant buildings, wings, and wards were opened, and organs became available almost immediately. Waiting times for organs were advertised in weeks and days, suggesting that a pool of blood-typed donors was available for execution and organ harvesting 'on demand'. (For comparison, waiting times in developed countries are often measured in months and years, not days and weeks.)

Throughout this period China had no voluntary organ donation system. Officials claimed that organs came from death row prisoners. But there was a major disconnect between this, officially
claimed source of organs, and the reality on the ground. For a striking example of this gap, consider the year 2007. In that year, reforms to China's judicial system significantly reduced the number of death penalty executions -- yet in the same year, the largest transplant center in Asia, in Tianjin, was built and began performing an estimated thousands of transplants annually.

The Chinese government has never given a credible explanation as to where all the organs came from. The leading hypothesis is that prisoners of conscience, especially Falun Gong practitioners, were widely used as an organ source.

In 2015, under increasing international pressure, Chinese officials claimed that they had stopped using organs from prisoners. They convinced the World Health Organization and other international medical groups that they were sincere in this promise. Officials presented data to support these claims in 2018. The data they presented was extremely thin.

In a 2019 paper in *BMC Medical Ethics* with Dr. Lavee and the statistician Raymond Hinde, we examined these and other numbers. We found that the official figures were extraordinarily close to a simple mathematical model -- meaning that the growth of the data was extremely smooth, to an unnatural degree. We found no other country with a remotely similar growth trajectory. China's data was between one and two orders of magnitude smoother (i.e. closer to the simple model) than that of any other country. Moreover, because China's numbers were growing so fast, there is even less reason it should have conformed so closely to a simple model. Our research found numerous other contradictory and impossible claims in other official datasets, including at the central, provincial, municipal, and hospital level, using both quantitative and qualitative analysis.

Dr. David Spiegelhalter, a former president of the Royal Statistical Society and a leading statistician in the UK, reviewed our paper, writing that: "I... feel their analyses are appropriate... the anomalies in the data... follow a systematic and surprising pattern. The close agreement of the numbers of donors and transplants with a quadratic function is remarkable, and is in sharp contrast to other countries who have increased their activity over this period... I cannot think of any good reason for such a quadratic trend arising naturally."

The most recent paper Dr. Lavee and I produced, published last month in the *American Journal of Transplantation*, deals with the involvement of surgeons in heart procurement operations.

The research uses a combination of data science, clinical forensics, and Chinese-language text analysis. First, we obtained 124,000 Chinese-language medical papers from academic and commercial databases in China. We then digitized and filtered them down to 2,800 papers about heart and lung procurement surgeries. We then programmed a fuzzy string matching algorithm to search through those papers for phrases indicative of surgeon participation in executions by organ procurement. This resulted in 310 papers for forensic analysis. Of these, 71 papers gave explicit descriptions of surgeons appearing to violate the dead donor rule while procuring hearts.
from prisoners. In plain language, the papers appear to show that the donors were alive at the
time of surgery, and were killed by the transplant surgeons in the process of heart extraction.

These findings show a uniquely close and long-running collaboration between the PRC’s
medical establishment and its public security system. Further, it is likely that many of these
transplants were from political prisoners. This would make PRC surgeons, many of whom were
trained in the West, involved in medicalized extrajudicial killing.

Though our last finding is in 2015, we are not certain that this means China ceased the practice.
We think it is at least as, if not more, plausible that journals were simply told to stop publishing
these incriminating details. The grassroots investigation collective, the World Organization to
Investigate the Persecution of Falun Gong, published a detailed Chinese-language report of
similar findings in September 2014. So the absence of these admissions after 2015 corresponds
both to the reform program and to this earlier exposure of the practice.

The explanation one considers most plausible depends heavily upon one's priors about the nature
of China's political system.

The leader of China's organ transplant sector, Huang Jiefu, has claimed that the country will be
performing 50,000 transplants from voluntary donors by 2023. This is an extraordinary claim
from a country that had no voluntary transplant system to speak of just a years ago. This would
be more transplants than even the United States. Given what we know about the falsification of
organ registry data and the involvement of transplant professionals in the execution of prisoners
by organ procurement, there are major questions about the real source of all these organs.

These questions are particularly urgent now, given the mass incarceration of new political
prisoner populations in Xinjiang in recent years, and their obvious vulnerability to this form of
predation.